SYSTEMS, PROCESSES AND INTEGRATED CIRCUITS FOR RATE AND/OR DIVERSITY ADAPTATION FOR PACKET COMMUNICATIONS

ABSTRACT

A process (111,101) of sending packets of real-time information at a sender (311) includes steps of initially generating at the sender the packets of real-time information with a source rate (s11) greater than zero kilobits per second, and a time or path or combined time/path diversity rate (d11), the amount of diversity (d11) initially being at least zero kilobits per second. The process sends the packets, thereby resulting in a quality of service QoS, and optionally obtains at the sender (311) a measure of the QoS. Rate/diversity adaptation decision may be performed at receiver (361') instead. Another step compares the QoS with a threshold of acceptability (Th1), and when the QoS is on an unacceptable side of said threshold (Th1) increases the diversity rate (d11 to d22) and sends not only additional ones of the packets of real-time information but also sends diversity packets at the diversity rate as increased (d22 . Increasing the diversity rate (d11 to d22) while either reducing or keeping unchanged the overall transmission rate (sij+dij) is an important new improvement in even solely-time-diversity embodiments. In another form of the invention a single-chip integrated circuit includes a processor circuit (1511), and a rate-and-diversity control (1561). Here again,

the diversity is contemplated to be time diversity, path diversity, and combined time/path diversity in various embodiments. Other embodiments disclosed encompass other processes, improved packets and packet ensembles, integrated circuits, chipsets, computer add-in cards, information storage articles, systems, computers, gateways, routers, cellular telephone handsets, wireless base stations, appliances, and packet networks, and other forms as claimed.